

F A X**MONTGOMERY WATSON**

US EPA RECORDS CENTER REGION 5



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From: Peter VagtSubject: ACS NPL Site Sediment Sampling**COMMENTS**

The following items are attached to provide a summary of the Round 1 and Round 2 Sediment Sample Analyses results:

Table 1. Update of Wetland PCB Sediment Sampling. This table includes the analytical results for PCBs and mercury in the Round 1 analyses and the PCB results for the Round 2 analyses.

Plot of Results through Round 2. This is a two-page tabulation to provide a graphic representation of the results of the first two rounds of analysis.

Table 2. Sample Analysis Selection Matrix. This is a tabulation of all samples collected, with a listing of which samples are being analyzed for each round of analysis. The column titled "Rd 3 Spls" indicates the samples that have been submitted for the third round of analysis.

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Table 1

Sample-ID	Depth	AR-1016	AR-1221	AR-1232	AR-1242	AR-1248	AR-1254	AR-1260	Total PCBs mg/kg	Mercury mg/kg
Round 1 Analytical Results - Final, Unvalidated: 12/9/96										
APD-Culvert Outfall	0.5	U	U	U	U	510	810 P	760 P	2.08	0.16 UN
APD-Culvert Downstream	0.5	U	U	U	U	58	110 P	120	0.29	0.11 UN
APD-Culvert Upstream (1)	0.5	U	U	U	U	29 JP	43 JP	27 JP	0.10	0.17 UN
APD-Culvert Upstream (2)	0.5	U	U	U	U	U	U	U	ND	0.19 UN
APD-SDB1	0.5	U	U	U	U	U	15 JP	41 J	0.056	0.43 U
APD-SDB5	0.5	U	U	U	U	250	830	430 P	1.5	0.28
APD-SDB9	0.5	U	U	U	U	2,100 J	7,100	4,900 P	14.1	0.28
APD-SDC2	0.5	U	U	U	U	49 JP	99 P	63 JP	0.21	0.24 U
APD-SDC4	0.5	U	U	U	U	72 P	230	130 P	0.432	0.17 U
APD-SDC6	0.5	U	U	U	U	190 JP	940	760	1.89	0.12 U
APD-SDC8	0.5	U	U	U	U	23,000	35,000 P	15,000 P	73	0.60
APD-SDC9	1.0	U	U	U	U	21 JP	49 P	23 JP	0.093	0.12 U
APD-SDC10	0.5	U	U	U	U	170 P	360 P	170 P	0.7	0.12 UN
APD-SDD3	0.5	U	U	U	U	52 P	170	87 P	0.319	0.17 U
APD-SDD7	0.5	U	U	U	U	78 JP	320	250	0.65	0.11 U
APD-SDD9	0.5	U	U	U	U	1.8 JP	12 JP	6.9 JP	0.021	0.10 U
APD-SDT1 (B)	0.5	U	U	U	U	1,800 JP	4,800 P	3,600	18.2	0.44
APD-SDT1 (C)	0.5	U	U	U	U	2,300 JP	9,300 P	2,800 J	14.4	1.4
APD-SDT1 (D)	0.5	U	U	U	U	510 JP	3,500 P	1,200	5.2	2.6
APD-SDT2 (B)	0.5	U	U	U	U	930 J	3,400 P	2,900 F	7.23	0.15 U
APD-SDT2 (C)	0.5	U	U	U	J	99,000	200,000	60,000 JP	359	6.1
APD-SDT2 (D)	0.5	U	U	U	J	6,700 JP	17,000	5,400 JP	29	1.6
APD-SDT3 (B)	0.5	U	U	U	J	54,000 P	150,000	30,000 JP	234	1.2
APD-SDT3 (C)	1.0	U	U	U	J	80 F	100 58	43 JP	0.28	0.13 U
APD-SDT3 (D)	0.5	U	U	U	J	2,200 JP	7,000	6,500 F	16	2.5
APD-SDT4 (B)	0.5	U	U	U	J	13 JP	80 P	51 F	0.15	3.19 UN
APD-SDT4 (C)	1.0	U	U	U	U	10,000 JP	31,000 JP	19,000 J	60	0.28 N
APD-SDT4 (D)	0.5	U	U	U	U	22 JP	590	200	0.81	3.12 UN

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Table 1

Sample-ID	Depth	AR-1016	AR-1221	AR-1232	AR-1242	AR-1248	AR-1254	AR-1260	Total PCBs mg/kg	Mercury mg/kg
Round 2 Analytical Results - Preliminary Draft: 12/23/96										
APD-Culvert Outfall	1.0	U	U	U	U	U	28 JP	U	0.028	na
APD-SDA2	0.5	U	U	U	U	U	130	66	0.196	na
APD-SDA5	0.5	U	U	U	U	4.2 JP	2.8 JP	U	0.007	na
APD-SDA9	0.5	U	U	U	U	U	170	150	0.32	na
APD-SDB1 Dup	0.5	U	U	U	U				ND	na
APD-SDB4	0.5	U	U	U	U	38 J	54 J	14 JP	0.106	na
APD-SDB5	1.0	U	U	U	U	U	U	U	ND	na
APD-SDB6	0.5	U	U	U	U	160 J	370	190 J	0.72	na
APD-SDB8	0.5	U	U	U	U	79 J	250	83 J	0.412	na
APD-SDB9	1.0	U	U	U	U	27 JP	41 JP	U	0.068	na
APD-SDB10	0.5	U	U	U	U	230 J	570	300 JP	1.2	na
APD-SDC5	0.5	U	U	U	U				ND	na
APD-SDC6	1.0	U	U	U	U	U	U	U	ND	na
APD-SDC7	0.5	U	U	U	U	U	450	200	0.65	na
APD-SDC7 Dup	0.5	U	U	U	U	U	20,000	U	20	na
APD-SDC8	1.0	U	U	U	U	68	52	U	0.12	na
APD-SDC10	1.0	U	U	U	U	71	73 P	U	0.144	na
APD-SDC11	0.5	U	U	U	U	U	340	630	1.47	na
APD-SDD6	0.5	U	U	U	U	U	U	U	ND	na
APD-SDD8	0.5	U	U	U	U	U	44 P	U	0.044	na
APD-SDD10	0.5	U	U	U	U	U	95	35	0.13	na
APD-SD T1 (A)	0.5	U	U	U	U	U	570	240	0.81	na
APD-SD T1 (B)	1.0	U	U	U	U	8 JP	35 J	10 J	0.063	na
APD-SD T1 (C)	1.0	U	U	U	U	120 P	250	91 P	0.461	na
APD-SD T1 (D)	1.0	U	U	U	U	U	160	38 JP	0.198	na
APD-SD T1 (E)	0.5	U	U	U	U	57 JP	180 P	U	0.237	na
APD-SD T2 (A)	0.5	U	U	U	U	U	260 P	U	0.26	na
APD-SD T2 (B)	1.0	U	U	U	U	U	220	93	0.313	na
APD-SD T2 (C)	1.0	U	U	U	U	U	1,800	U	1.8	na
APD-SD T2 (D)	1.0	U	U	U	U	U	3,800	U	3.8	na
APD-SD T2 (D) Dup	0.5	U	U	U	U				ND	na
APD-SD T2 (D) Dup	1.0	U	U	U	U				ND	na

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Table 1

Sample-ID	Depth	AR-1016	AR-1221	AR-1232	AR-1242	AR-1248	AR-1254	AR-1260	Total PCBs mg/kg	Mercury mg/kg
APD-SD T2 (F)	0.5	U	U	U	U	U	U	U	ND	na
APD-SD T3 (A)	0.5	U	U	U	U	5,000 PD	6,600 PD	U	11.6	na
APD-SD T3 (B)	1.0	U	U	U	U	13,000 PD	14,000 PD	U	27	na
APD-SD T3 (D)	1.0	U	U	U	U	61 P	89 P	U	0.15	na
APD-SD T3 (E)	0.5	U	U	U	U	U	32C	490	0.72	na
APD-SD T4 (C)	1.5	U	U	U	U	U	7,600	3,600	11.2	na

Notes:

This table presents results for sediment samples collected at the ACS Site in Griffith, Indiana between November 20 and 22, 1996. Samples were analyzed in rounds. Round 1 was determined by mutual agreement between all parties. Round two samples were selected to include intervals to the side and beneath any sample with total PCBs greater than 1 ppm. Results are added to this table as they become available. The last date of revision is presented in each round's header line.

U = undetected

J = The associated numerical value is an estimated quantity, because the value was less than the CRQL.

P = This flag is used for a pesticide/PCB target compound when there is greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two values is reported.

N = Indicates spike sample recovery was not within control limits.

na = Not analyzed.

Plot of Results through Round 2

Transect Samples

depth	T1 (A)	T1 (B)	T1 (C)	T1 (D)	T1 (E)
0.5	0.81	10	14	4.2	0.24
1.0	E	0.063	0.46	0.20	E
1.5	E	E	E	E	E
0.5	T2 (A) 0.26	T2 (B) 7.2	T2 (C) 359	T2 (D) 29	T2 (E) ND
1.0	A	0.313	1.8	3.8	E
1.5	E	E	A	A	E
0.5	T3 (A) 12	T3 (B) 234	T3 (C) SD35=17	T3 (D) 16	T3 (E) 0.72
1.0	A	27	0.281	0.15	E
1.5	E	A		E	E
0.5	T4 (A) A	T4 (B) 0.15	T4 (C) SD21=13	T4 (D) 0.8	T4 (E)
1.0			60		
1.5			11.2		

Culvert Samples

0.5	Dwnstrm	0.29	Outfall	2.1
1.0				0.028
1.5				E
0.5			Upstrm 1	0.099
1.0				
1.5				
0.5			Upstrm 2	ND
1.0				
1.5				

Plot of Results through Round 2

SEDIMENT SAMPLE PCB RESULTS

Grid Samples

depth	A1	E	B1	0.056	C1	D1		
0.5								
1.0								
1.5								
0.5	A2	0.196	B2	E	C2	0.21	D2	
1.0				E				
1.5				E				
0.5	A3	E	B3	E	C3		D3	0.32
1.0				E				
1.5				E				
0.5	A4	E	B4	0.11	C4	0.43	D4	
1.0				E				
1.5				E				
0.5	A5	0.007	B5	1.51	C5	ND	D5	E
1.0				ND		E		F
1.5				E		E		E
0.5	A6	E	B6	0.72	C6	1.9	D6	ND
1.0				E		ND		E
1.5				E		E		F
0.5	A7	E	B7	A	C7	0.65	D7	0.65
1.0				E		A		
1.5				E		E		
0.5	A8	E	B8	0.41	C8	73	D8	0.044
1.0				E		0.12		E
1.5				E		E		E
0.5	A9	0.32	B9	14.1	C9	SD33=126	D9	0.021
1.0				0.068		0.093		
1.5				E				
0.5	A10	A	B10	1.2	C10	0.7	D10	0.13
1.0				A		0.14		E
1.5				E		E		E
0.5			B11	A	C11	1.47	D11	A
1.0				E		A		E
1.5				E		E		E

Conc in ppm
 Bold => 1 ppm PCBs
 E = Rd 2 Extract Only

Table 2

Sample Analysis Selection Matrix
ACS NPL Site

Sample ID	Depth	Rd 1 Spis		Rd 2 Spis		Rd 3 Spis	ALL
		Total PCBs	Extract	Total PCBs	Analyze	ROUNDS	
APD-SDA1	0.5		E				E
APD-SDA1	1.0		E				E
APD-SDA1	1.5		E				E
APD-SDA2	0.5		E	0.196			0.196
APD-SDA2	1.0		E				E
APD-SDA2	1.5		E				E
APD-SDA3	0.5		E				E
APD-SDA3	1.0		E				E
APD-SDA3	1.5		E				E
APD-SDA4	0.5		E				E
APD-SDA4	1.0		E				E
APD-SDA4	1.5		E				E
APD-SDA5	0.5		E	0.007			0.007
APD-SDA5	1.0		E				E
APD-SDA5	1.5		E				E
APD-SDA6	0.5		E				E
APD-SDA6	1.0		E				E
APD-SDA6	1.5		E				E
APD-SDA7	0.5		E				E
APD-SDA7	1.0		E				E
APD-SDA7	1.5		E				E
APD-SDA8	0.5		E				E
APD-SDA8	1.0		E				E
APD-SDA8	1.5		E				E
APD-SDA8 Dup	0.5		E				E
APD-SDA8 Dup	1.0		E				E
APD-SDA8 Dup	1.5		E				E
APD-SDA8 (1)	0.5		E				E
APD-SDA8 (1)	1.0		E				E
APD-SDA8 (1)	1.5		E				E
APD-SDA9	0.5		E	0.32			0.32
APD-SDA9	1.0		E				E
APD-SDA9	1.5		E				E
APD-SDA10	0.5		E			A	A
APD-SDA10	1.0		E				E
APD-SDA10	1.5		E				E
APD-SDB1	0.5	0.056					0.056
APD-SDB1	1.0						
APD-SDB1	1.5						
APD-SDB1 Dup	0.5		E	ND			ND
APD-SDB1 Dup	1.0						
APD-SDB1 Dup	1.5						
APD-SDB2	0.5		E				E
APD-SDB2	1.0		E				E
APD-SDB2	1.5		E				E
APD-SDB3	0.5		E				E
APD-SDB3	1.0		E				E
APD-SDB3	1.5		E				E
APD-SDB4	0.5		E	0.106			0.106
APD-SDB4	1.0		E				E
APD-SDB4	1.5		E				E

Table 2

Sample Analysis Selection Matrix
ACS NPL Site

Sample ID	Depth	Rd 1 Spls		Rd 2 Spls		Rd 3 Spls	ALL ROUNDS
		Total PCBs	Extract	Total PCBs	Analyze	Total PCBs	
APD-SDB5	0.5	1.51					1.51
APD-SDB5	1.0		E	ND			ND
APD-SDB5	1.5		E				E
APD-SDB6	0.5		E	0.72			0.72
APD-SDB6	1.0		E				E
APD-SDB6	1.5		E				E
APD-SDB7	0.5		E		A		A
APD-SDB7	1.0		E				E
APD-SDB7	1.5		E				E
APD-SDB8	0.5		E	0.412			0.412
APD-SDB8	1.0		E				E
APD-SDB8	1.5		E				E
APD-SDB9	0.5	14.1					14.1
APD-SDB9	1.0		E	0.068			0.068
APD-SDB9	1.5		E				E
APD-SDB10	0.5		E	1.2			1.2
APD-SDB10	1.0		E		A		A
APD-SDB10	1.5		E				E
APD-SDB11	0.5		E		A		A
APD-SDB11	1.0		E				E
APD-SDB11	1.5		E				E
APD-SDC1	0.5						
APD-SDC1	1.0						
APD-SDC1	1.5						
APD-SDC2	0.5	0.21					0.211
APD-SDC2	1.0						
APD-SDC2	1.5						
APD-SDC3	0.5						
APD-SDC3	1.0						
APD-SDC3	1.5						
APD-SDC4	0.5	0.432					0.432
APD-SDC4	1.0						
APD-SDC4	1.5						
APD-SDC5	0.5		E	ND			ND
APD-SDC5	1.0		E				E
APD-SDC5	1.5		E				E
APD-SDC6	0.5	1.89					1.89
APD-SDC6	1.0		E	ND			ND
APD-SDC6	1.5		E				E
APD-SDC7	0.5		E	0.65			0.65
APD-SDC7	1.0		E		A		A
APD-SDC7	1.5		E				E
APD-SDC7 Dup	0.5		E	20			20
APD-SDC7 Dup	1.0		E				E
APD-SDC7 Dup	1.5		E				E
APD-SDC8	0.5	73					73
APD-SDC8	1.0		E	0.12			0.12
APD-SDC8	1.5		E				E
APD-SDC9	0.5	SD33=126					SD33=126
APD-SDC9	1.0	0.093					0.093
APD-SDC9	1.5						

Sample Analysis Selection Matrix
ACS NPL Site

Table 2

Sample ID	Depth	Rd 1 Spis	Rd 2 Spis		Rd 3 Spis	ALL
		Total PCBs	Extract	Total PCBs	Analyze	ROUNDS Total PCBs
APD-SDC10	0.5	0.7				0.7
APD-SDC10	1.0		F	0.144		0.144
APD-SDC10	1.5		F			E
APD-SDC11	0.5		F	1.47		1.47
APD-SDC11	1.0		F		A	A
APD-SDC11	1.5		F			E
APD-SDD1	0.5					
APD-SDD1	1.0					
APD-SDD1	1.5					
APD-SDD1 Dup	0.5					
APD-SDD1 Dup	1.0					
APD-SDD1 Dup	1.5					
APD-SDD2	0.5					
APD-SDD2	1.0					
APD-SDD2	1.5					
APD-SDD3	0.5	0.319				0.319
APD-SDD3	1.0					
APD-SDD3	1.5					
APD-SDD4	0.5					
APD-SDD4	1.0					
APD-SDD4	1.5					
APD-SDD5	0.5		E			E
APD-SDD5	1.0		E			E
APD-SDD5	1.5		E			E
APD-SDD6	0.5		E	ND		ND
APD-SDD6	1.0		E			E
APD-SDD6	1.5		E			E
APD-SDD7	0.5	0.65				0.648
APD-SDD7	1.0					
APD-SDD7	1.5					
APD-SDD8	0.5		E	0.044		0.044
APD-SDD8	1.0		E			E
APD-SDD8	1.5		E			E
APD-SDD9	0.5	0.021				0.021
APD-SDD9	1.0					
APD-SDD9	1.5					
APD-SDD10	0.5		E	0.13		0.13
APD-SDD10	1.0		E			E
APD-SDD10	1.5		E			E
APD-SDD11	0.5		E		A	A
APD-SDD11	1.0		E			E
APD-SDD11	1.5		E			E
APD-SDE6	0.5		E			E
APD-SDE6	1.0		E			E
APD-SDE6	1.5		E			E
APD-SDE6 Dup	0.5		E			E
APD-SDE6 Dup	1.0		E			E
APD-SDE6 Dup	1.5		E			E
APD-SDE7	0.5					
APD-SDE7	1.0					
APD-SDE7	1.5					

Sample Analysis Selection Matrix
ACS NPL Site

Table 2

Sample ID	Depth	Rd 1 Spls		Rd 2 Spls		Rd 3 Spls		ALL
		Total PCRs	Extract	Total PCBs	Analyze	Total PCBs	ROUNDS	
APD-SDE8	0.5		E					E
APD-SDE8	1.0		E					E
APD-SDE8	1.5		E					E
APD-SD T1 (A)	0.5		E	0.81				0.81
APD-SD T1 (A)	1.0		E					E
APD-SD T1 (A)	1.5		E					E
APD-SD T1 (B)	0.5	10.2						10.2
APD-SD T1 (B)	1.0		F	0.063				0.063
APD-SD T1 (B)	1.5		F					E
APD-SD T1 (C)	0.5	14.4						14.4
APD-SD T1 (C)	1.0		F	0.461				0.461
APD-SD T1 (C)	1.5		F					E
APD-SD T1 (D)	0.5	5.21						5.21
APD-SD T1 (D)	1.0		F	0.198				0.198
APD-SD T1 (D)	1.5		F					E
APD-SD T1 (E)	0.5		E	0.237				0.237
APD-SD T1 (E)	1.0		E					E
APD-SD T1 (E)	1.5		E					E
APD-SD T2 (A)	0.5		E	0.26				0.26
APD-SD T2 (A)	1.0		E		A			A
APD-SD T2 (A)	1.5		E					E
APD-SD T2 (B)	0.5	7.23						7.23
APD-SD T2 (B)	1.0		E	0.313				0.313
APD-SD T2 (B)	1.5		E					F
APD-SD T2 (C)	0.5	359						359
APD-SD T2 (C)	1.0		E	1.8				1.8
APD-SD T2 (C)	1.5		E		A			A
APD-SD T2 (D)	0.5	29						29.1
APD-SD T2 (D)	1.0		E	3.8				3.8
APD-SD T2 (D)	1.5		E		A			A
APD-SD T2 (D) Dup	0.5		E	ND				ND
APD-SD T2 (D) Dup	1.0		E	ND				ND
APD-SD T2 (D) Dup	1.5		E					E
APD-SD T2 (E)	0.5		E	ND				ND
APD-SD T2 (E)	1.0		E					E
APD-SD T2 (E)	1.5		E					E
APD-SD T3 (A)	0.5		E	11.60				11.6
APD-SD T3 (A)	1.0		E		A			A
APD-SD T3 (A)	1.5		E					E
APD-SD T3 (B)	0.5	234						234
APD-SD T3 (B)	1.0		E	27				27
APD-SD T3 (B)	1.5		E		A			A
APD-SD T3 (C)	0.5	SD35=17						SD35=17
APD-SD T3 (C)	1.0	0.28						0.281
APD-SD T3 (C)	1.5							
APD-SD T3 (D)	0.5	15.7						15.7
APD-SD T3 (D)	1.0		E	0.15				0.15
APD-SD T3 (D)	1.5		E					E
APD-SD T3 (E)	0.5		E	0.72				0.72
APD-SD T3 (E)	1.0		E					E
APD-SD T3 (E)	1.5		E					E

Sample Analysis Selection Matrix
ACS NPL Site

Table 2

Sample ID	Depth	Rd 1 Spls		Rd 2 Spls		Rd 3 Spls		ALL
		Total PCBs	Extract	Total PCBs	Analyze	ROLNDS	Total PCBs	
APD-SD T4 (A)	0.5					A		A
APD-SD T4 (A)	1.0							
APD-SD T4 (A)	1.5							
APD-SD T4 (B)	0.5	0.15						0.154
APD-SD T4 (B)	1.0							
APD-SD T4 (B)	1.5							
APD-SD T4 (C)	0.5	SD21=13						SD21=13
APD-SD T4 (C)	1.0	60						60
APD-SD T4 (C)	1.5		E	11.2				11.2
APD-SD T4 (D)	0.5	0.81						0.812
APD-SD T4 (D)	1.0							
APD-SD T4 (D)	1.5							
APD-SD T4 (E)	0.5							
APD-SD T4 (E)	1.0							
APD-SD T4 (E)	1.5							
APD-Culvert Outfall	0.5	2.08						2.08
APD-Culvert Outfall	1.0		E	0.028				0.028
APD-Culvert Outfall	1.5		E					E
APD-Culvert Downstream	0.5	0.29						0.288
APD-Culvert Downstream	1.0							
APD-Culvert Downstream	1.5							
APD-Culvert Upstream (1)	0.5	0.099						0.099
APD-Culvert Upstream (1)	1.0							
APD-Culvert Upstream (1)	1.5							
APD-Culvert Upstream (2)	0.5	ND						ND
APD-Culvert Upstream (2)	1.0							
APD-Culvert Upstream (2)	1.5							
APR-Rinsate	1							
Total		28	0	57		0		

Notes:

All sediment samples collected November 20 and 21, 1996 are included here.

Total PCBs = sum of PCB results (generally ARs 1248, 1254, and 1260), converted to mg/kg.

E = Extraction requested (extracts have a holdtime of 40 days after the extraction date).

Round 1 = samples from 0.5' (or 1.0' for C9 & T4(C)) as selected by agencies. Earlier sediment samples collected at grid points are also included for reference.

Round 2 = Analyze all samples on each side and beneath any Rd 1 sample > 1 ppm PCBs. Extract samples further out to meet reasonable worst case scenario.

Round 3 = Analyze samples extracted in Round 2 using same criteria as Rd 2.